

LISTING OF THE CLAIMS

The following listing of the claims replaces all prior versions and listings of claims for this application. Within this listing of the claims, claims 1 and 2 are currently amended. While claims 47-56 are withdrawn as drawn to a non-elected invention, these claims are the subject of a petition requesting their rejoinder.

1. **(Currently amended)** A polymer prepared by polymerization of a monomer mixture, the mixture comprising:

(a) at least one first olefinic monomer containing an acetal or ketal linkage, the acid-catalyzed cleavage of which renders the polymer soluble in aqueous base; and

(b) at least one second olefinic monomer selected from (i) an olefinic monomer containing a pendant fluorinated hydroxyalkyl group $[[R^H]]$, (ii) an olefinic monomer containing a pendant fluorinated alkylsulfonamide group $[[R^S]]$, and (iii) combinations thereof.

2. **(Currently amended)** The polymer of claim 1, wherein the acetal or ketal linkage is contained within an acid-cleavable substituent R^{CL} in the first olefinic monomer, the acid-cleavable substituent R^{CL} having the structure



in which:

m, n, and q are independently zero or 1;

L^1 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^1 is optionally substituted and/or heteroatom-containing C_1 - C_{12} alkylene, L^1 may be linear, branched, or cyclic;

X is selected from C_3 - C_{30} alicyclic and substituted C_3 - C_{30} alicyclic;

L^2 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^2 is optionally substituted and/or heteroatom-containing C_3 - C_{12} alkylene, L^2 may be linear, branched, or cyclic; and

R^1 is selected from acetal-containing and ketal-containing substituents.

3. **(Original)** The polymer of claim 2, wherein:

L^1 is selected from C_1 - C_{12} alkylene, and heteroatom-containing C_1 - C_{12} alkylene;

X is C_3 - C_{18} alicyclic;

L^2 is selected from C_1 - C_{12} alkylene, hydroxyl-substituted C_1 - C_{12} alkylene, C_1 - C_{12} fluoroalkylene, and hydroxyl-substituted C_1 - C_{12} fluoroalkylene; and

R^1 has the structure $-(CO)-O-CR^4R^5-O-CR^6R^7R^8$ in which R^4 , R^5 , R^6 , R^7 , and R^8 are selected so as to render R^1 acid-cleavable.

4. **(Original)** The polymer of claim 3, wherein:

R^4 , R^5 , R^6 , R^7 , and R^8 are independently selected from hydrogen, C_4 - C_{12} hydrocarbyl, substituted C_4 - C_{12} hydrocarbyl, heteroatom-containing C_4 - C_{12} hydrocarbyl, and substituted heteroatom-containing C_4 - C_{12} hydrocarbyl, and further wherein any two of R^4 , R^5 , R^6 , R^7 , and R^8 may be linked to form a cyclic group.

5. **(Original)** The polymer of claim 4, wherein:

L^1 is selected from C_1 - C_{12} alkylene, and heteroatom-containing C_1 - C_{12} alkylene;

X is C_6 - C_{12} alicyclic; and

L^2 is of the formula $-CR^9R^{10}-$ wherein R^9 is hydrogen, C_1 - C_{12} alkyl, or C_1 - C_{12} fluoroalkyl, and R^{10} is C_1 - C_{12} alkyl or C_1 - C_{12} fluoroalkyl.

6. **(Original)** The polymer of claim 1, wherein the second olefinic monomer contains a pendant fluorinated hydroxyalkyl group R^H .

7. **(Original)** The polymer of claim 6, wherein R^H has the structure $-L^3-CR^{11}R^{12}-OH$, in which:

L^3 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, C_3 - C_{15} alicyclic, C_3 - C_{15} fluoroalicyclic, and combinations thereof;

R^{11} is selected from hydrogen, C_1 - C_{24} alkyl, and substituted C_1 - C_{24} alkyl; and

R^{12} is C_1 - C_{24} alkyl or fluorinated C_1 - C_{24} alkyl, with the proviso that at least one of R^{11} and R^{12} is fluorinated; and further wherein R^{11} and R^{12} can be taken together to form a ring.

8. **(Original)** The polymer of claim 7, wherein R^{11} is selected from hydrogen, C_1 - C_{12} alkyl, and C_1 - C_{12} haloalkyl, and R^{12} is C_1 - C_{12} alkyl or fluorinated C_1 - C_{12} alkyl.

9. **(Original)** The polymer of claim 8, wherein R^{11} is selected from hydrogen, C_1 - C_8 alkyl, and fluorinated C_1 - C_8 alkyl, and R^{12} is C_1 - C_8 alkyl or fluorinated C_1 - C_8 alkyl.

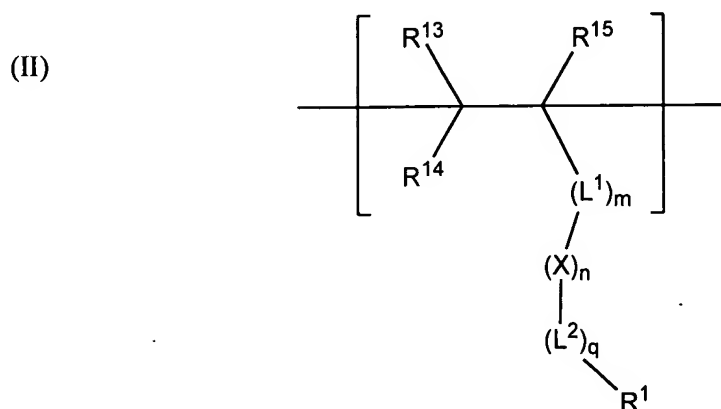
10. **(Original)** The polymer of claim 9, wherein R^{11} is selected from hydrogen, C_1 - C_4 alkyl, semi-fluorinated C_1 - C_4 alkyl, and perfluorinated C_1 - C_4 alkyl, and R^{12} is C_1 - C_4 alkyl, semi-fluorinated C_1 - C_4 alkyl, or perfluorinated C_1 - C_4 alkyl.

11. **(Original)** The polymer of claim 10, wherein R^{11} and R^{12} are both trifluoromethyl.

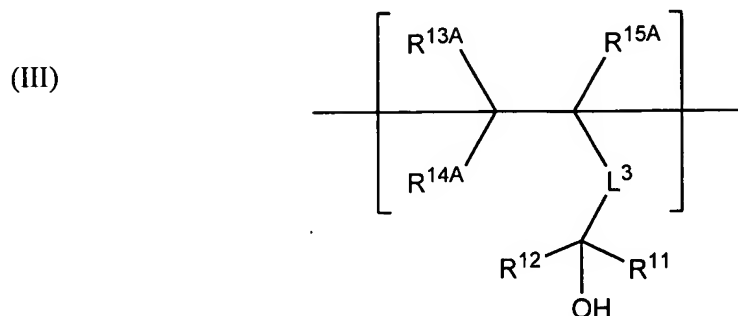
12. **(Original)** The polymer of claim 1, wherein the second olefinic monomer contains a pendant fluorinated alkylsulfonamide group R^S .

13. **(Original)** The polymer of claim 12, wherein R^S has the structure $-L^3-SO_2-NHR^{16}$, in which:
 L^3 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, C_3 - C_{15} alicyclic, C_3 - C_{15} fluoroalicyclic, combinations thereof; and
 R^{16} is selected from C_1 - C_{24} alkyl and substituted C_1 - C_{24} alkyl, C_1 - C_{24} fluoroalkyl and substituted C_1 - C_{24} fluoroalkyl.

14. **(Original)** A polymer comprising a first olefinic monomer unit having the structure of formula (II)



and a second olefinic monomer unit having the structure of formula (III)



wherein:

m, n, and q are independently zero or 1;

L^1 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^1 is optionally substituted and/or heteroatom-containing C_1 - C_{12} alkylene, L^1 may be linear, branched, or cyclic;

X is selected from C_3 - C_{30} alicyclic and substituted C_3 - C_{30} alicyclic;

L^2 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^2 is optionally substituted and/or heteroatom-containing C_3 - C_{12} alkylene, L^2 may be linear, branched, or cyclic; and

R^1 is selected from acetal-containing and ketal-containing substituents;

L^3 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, C_3 - C_{15} alicyclic, C_3 - C_{15} fluoroalicyclic, and combinations thereof;

R^{11} is selected from hydrogen, C_1 - C_{24} alkyl, and substituted C_1 - C_{24} alkyl;

R^{12} is C_1 - C_{24} alkyl or fluorinated C_1 - C_{24} alkyl, with the proviso that at least one of R^{11} and R^{12} is fluorinated; and further wherein R^{11} and R^{12} can be taken together to form a ring;

R^{13} and R^{13A} are independently selected from hydrogen, fluorine, C_1 - C_{24} alkyl, substituted C_1 - C_{24} alkyl, C_1 - C_{24} alkoxy, and substituted C_1 - C_{24} alkoxy; and

R^{14} and R^{14A} are independently selected from hydrogen, fluorine, C_1 - C_{24} alkyl and substituted C_1 - C_{24} alkyl; and

R^{15} and R^{15A} are independently selected from hydrogen, fluorine, C_1 - C_{24} alkyl, and substituted C_1 - C_{24} alkyl, and further wherein any two of L^1 , R^{13} , R^{14} , and R^{15} may be taken together to form a ring and any two of L^3 , R^{13A} , R^{14A} , and R^{15A} may be taken together to form a ring.

15. **(Original)** The polymer of claim 14, wherein

L^1 is selected from C_1 - C_{12} alkylene, and heteroatom-containing C_1 - C_{12} alkylene;

X is C_3 - C_{18} alicyclic;

L^2 is selected from C_1 - C_{12} alkylene, hydroxyl-substituted C_1 - C_{12} alkylene, C_1 - C_{12} fluoroalkylene, and hydroxyl-substituted C_1 - C_{12} fluoroalkylene;

R^1 has the structure $-(CO)-O-CR^4R^5-O-CR^6R^7R^8$ in which R^4 , R^5 , R^6 , R^7 , and R^8 are selected so as to render R^1 acid-cleavable;

R^{11} is selected from hydrogen, C_1 - C_{12} alkyl, and C_1 - C_{12} haloalkyl; and

R^{12} is C_1 - C_{12} alkyl or fluorinated C_1 - C_{12} alkyl; and further wherein R^{11} and R^{12} can be taken together to form a ring.

16. **(Original)** The polymer of claim 15, wherein

R^4 , R^5 , R^6 , R^7 , and R^8 are independently selected from hydrogen, C_4 - C_{12} hydrocarbyl, substituted C_4 - C_{12} hydrocarbyl, heteroatom-containing C_4 - C_{12} hydrocarbyl, and substituted heteroatom-containing C_4 - C_{12} hydrocarbyl, and further wherein any two of R^4 , R^5 , R^6 , R^7 , and R^8 may be linked to form a cyclic group;

R^{11} is selected from hydrogen, C_1 - C_8 alkyl, and fluorinated C_1 - C_8 alkyl; and

R^{12} is C_1 - C_8 alkyl or fluorinated C_1 - C_8 alkyl; and further wherein R^{11} and R^{12} can be taken together to form a ring.

17. **(Original)** The polymer of claim 16, wherein

L^1 is selected from C_1 - C_6 alkylene, and heteroatom-containing C_1 - C_6 alkylene;

X is C_6 - C_{12} alicyclic; and

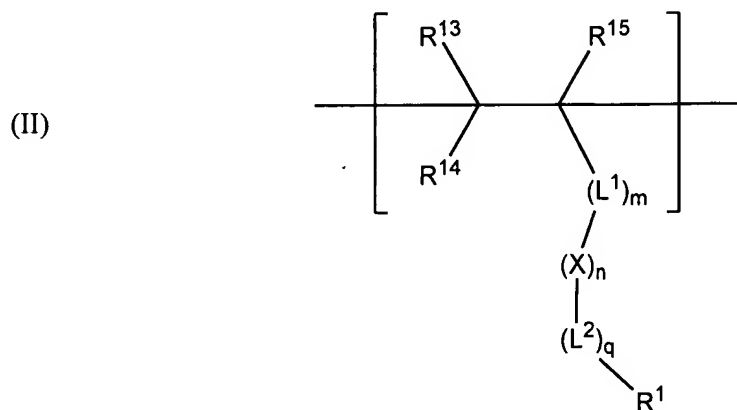
L^2 is of the formula $-CR^9R^{10}-$ wherein R^9 is hydrogen, C_1 - C_{12} alkyl, or C_1 - C_{12} fluoroalkyl, and R^{10} is C_1 - C_{12} alkyl or C_1 - C_{12} fluoroalkyl;

R^{11} is selected from hydrogen, C_1 - C_4 alkyl, semi-fluorinated C_1 - C_4 alkyl, and perfluorinated C_1 - C_4 alkyl; and

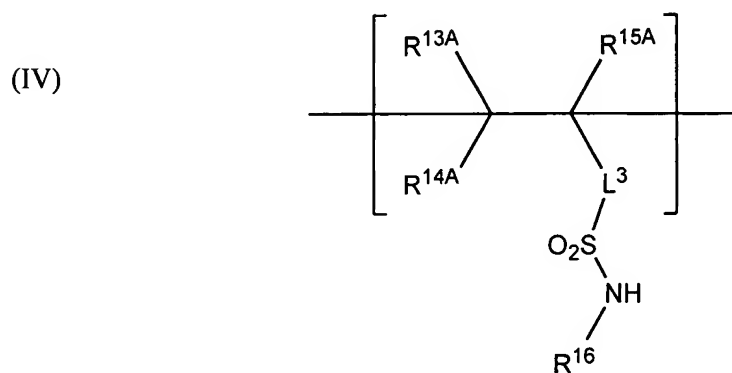
R^{12} is C_1 - C_4 alkyl, semi-fluorinated C_1 - C_4 alkyl, or perfluorinated C_1 - C_4 alkyl.

18. **(Original)** The polymer of claim 17, wherein R^{11} and R^{12} are both trifluoromethyl.

19. **(Original)** A polymer comprising a first olefinic monomer unit having the structure of formula (II)



and a second olefinic monomer unit having the structure of formula (IV)



wherein:

m, n, and q are independently zero or 1;

L^1 is selected from $\text{C}_1\text{-C}_{12}$ alkylene, substituted $\text{C}_1\text{-C}_{12}$ alkylene, $\text{C}_1\text{-C}_{12}$ heteroalkylene, substituted $\text{C}_1\text{-C}_{12}$ heteroalkylene, and further wherein when L^1 is optionally substituted and/or heteroatom-containing $\text{C}_1\text{-C}_{12}$ alkylene, L^1 may be linear, branched, or cyclic;

X is selected from $\text{C}_3\text{-C}_{30}$ alicyclic and substituted $\text{C}_3\text{-C}_{30}$ alicyclic;

L^2 is selected from $\text{C}_1\text{-C}_{12}$ alkylene, substituted $\text{C}_1\text{-C}_{12}$ alkylene, $\text{C}_1\text{-C}_{12}$ heteroalkylene, substituted $\text{C}_1\text{-C}_{12}$ heteroalkylene, and further wherein when L^2 is optionally substituted and/or heteroatom-containing $\text{C}_3\text{-C}_{12}$ alkylene, L^2 may be linear, branched, or cyclic; and

R^1 is selected from acetal-containing and ketal-containing substituents;

L^3 is selected from $\text{C}_1\text{-C}_{12}$ alkylene, substituted $\text{C}_1\text{-C}_{12}$ alkylene, $\text{C}_1\text{-C}_{12}$ heteroalkylene, substituted $\text{C}_1\text{-C}_{12}$ heteroalkylene, $\text{C}_3\text{-C}_{15}$ alicyclic, $\text{C}_3\text{-C}_{15}$ fluoroalicyclic, and combinations thereof;

R^{13} and R^{13A} are independently selected from hydrogen, fluorine, C_1 - C_{24} alkyl, substituted C_1 - C_{24} alkyl, C_1 - C_{24} alkoxy, and substituted C_1 - C_{24} alkoxy; and

R^{14} and R^{14A} are independently selected from hydrogen, fluorine, C_1 - C_{24} alkyl and substituted C_1 - C_{24} alkyl;

R^{15} and R^{15A} are independently selected from hydrogen, fluorine, C_1 - C_{24} alkyl, and substituted C_1 - C_{24} alkyl, and further wherein any two of L^1 , R^{13} , R^{14} , and R^{15} may be taken together to form a ring and any two of L^3 , R^{13A} , R^{14A} , and R^{15A} may be taken together to form a ring; and

R^{16} is selected from C_1 - C_{24} alkyl and substituted C_1 - C_{24} alkyl, C_1 - C_{24} fluoroalkyl and substituted C_1 - C_{24} fluoroalkyl.

20. **(Original)** The polymer of claim 19, wherein:

L^1 is selected from C_1 - C_{12} alkylene, and heteroatom-containing C_1 - C_{12} alkylene;

X is C_3 - C_{18} alicyclic;

L^2 is selected from C_1 - C_{12} alkylene, hydroxyl-substituted C_1 - C_{12} alkylene, C_1 - C_{12} fluoroalkylene, and hydroxyl-substituted C_1 - C_{12} fluoroalkylene; and

R^1 has the structure $-(CO)-O-CR^4R^5-O-CR^6R^7R^8$ in which R^4 , R^5 , R^6 , R^7 , and R^8 are selected so as to render R^1 acid-cleavable.

21. **(Original)** The polymer of claim 20, wherein

R^4 , R^5 , R^6 , R^7 , and R^8 are independently selected from hydrogen, C_4 - C_{12} hydrocarbyl, substituted C_4 - C_{12} hydrocarbyl, heteroatom-containing C_4 - C_{12} hydrocarbyl, and substituted heteroatom-containing C_4 - C_{12} hydrocarbyl, and further wherein any two of R^4 , R^5 , R^6 , R^7 , and R^8 may be linked to form a cyclic group.

22. **(Original)** The polymer of claim 21, wherein

L^1 is selected from C_1 - C_6 alkylene, and heteroatom-containing C_1 - C_6 alkylene;

X is C_6 - C_{12} alicyclic; and

L^2 is of the formula $-CR^9R^{10}-$, wherein R^9 is hydrogen, C_1 - C_{12} alkyl, or C_1 - C_{12} fluoroalkyl, and R^{10} is C_1 - C_{12} alkyl or C_1 - C_{12} fluoroalkyl.

23. **(Original)** The polymer of claim 1, wherein the monomer mixture comprises two or more different first olefinic monomers.

24. **(Original)** The polymer of claim 1, wherein the monomer mixture further comprises at least one additional olefinic monomer.

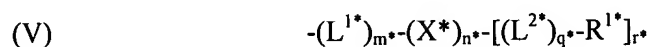
25. **(Original)** The polymer of claim 23, wherein monomer mixture further comprises at least one additional olefinic monomer.

26. **(Original)** The polymer of claim 24, wherein the at least one additional olefinic monomer is selected from (i) a monomer containing an acid-cleavable substituent R^{CL*} ; (ii) a monomer containing an acid-inert, polar substituent, R^P ; (iii) a monomer containing an acid-inert, nonpolar substituent, R^{NP} ; and (iv) combinations thereof.

27. **(Original)** The polymer of claim 26, comprising monomer units substituted with R^P and optionally R^{NP} .

28. **(Original)** The polymer of claim 26, comprising monomer units substituted with R^{NP} and optionally R^P .

29. **(Original)** The polymer of claim 26, wherein R^{CL*} has the structure



in which:

m^* , n^* , and q^* are independently zero or 1;

r^* is an integer of at least 1;

L^{1*} is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^{1*} is optionally substituted and/or heteroatom-containing C_1 - C_{12} alkylene, L^{1*} may be linear, branched, or cyclic;

X^* is selected from C_3 - C_{30} alicyclic and substituted C_3 - C_{30} alicyclic;

L^{2*} is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^{2*} is optionally substituted and/or heteroatom-containing C_3 - C_{12} alkylene, L^{2*} may be linear, branched, or cyclic; and

R^{1*} is selected from acid-cleavable ester, oligomeric ester, ether, carbonate, and orthoester substituents.

30. **(Original)** The polymer of claim 29, wherein:

r^* is 1 or 2;

L^{1*} is selected from C_1 - C_{12} alkylene, and heteroatom-containing C_1 - C_{12} alkylene;

X^* is C_3 - C_{18} alicyclic;

L^{2*} is selected from C_1 - C_{12} alkylene, hydroxyl-substituted C_1 - C_{12} alkylene, C_1 - C_{12} fluoroalkylene, and hydroxyl-substituted C_1 - C_{12} fluoroalkylene; and

R^{1*} is selected from $-(CO)-O-R^{4*}$, $-[Q^{1*}-(CO)-O-]_{h^*}-R^{5*}$, $-O-R^{6*}$, and $-O-(CO)-O-R^{7*}$;

h^* is an integer in the range of 2 to 8 inclusive,

Q^{1*} is C_1 - C_{12} alkylene or C_1 - C_{12} fluoroalkylene,

R^{4*} and R^{6*} are selected from (a) hydrocarbyl substituents with a tertiary carbon attachment point, (b) substituents having the structure $-CR^{8*}R^{9*}-O-CR^{10*}R^{11*}R^{12*}$, and (c) substituents having the structure $-CR^{13*}(OR^{14*})_2$;

R^{5*} , R^{7*} , and R^{14*} are selected from C_4 - C_{12} hydrocarbyl, substituted C_4 - C_{12} hydrocarbyl, heteroatom-containing C_4 - C_{12} hydrocarbyl, and substituted heteroatom-containing C_4 - C_{12} hydrocarbyl; and

R^{8*} , R^{9*} , R^{10*} , R^{11*} , R^{12*} , and R^{13*} are independently selected from hydrogen, C_4 - C_{12} hydrocarbyl, substituted C_4 - C_{12} hydrocarbyl, heteroatom-containing C_4 - C_{12} hydrocarbyl, and substituted heteroatom-containing C_4 - C_{12} hydrocarbyl, and further wherein any two of R^{8*} , R^{9*} , R^{10*} , R^{11*} , and R^{12*} may be linked to form a cyclic group.

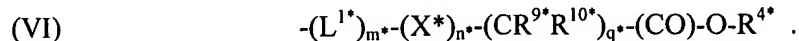
31. **(Original)** The polymer of claim 30, wherein:

L^{1*} is selected from C_1 - C_6 alkylene, and heteroatom-containing C_1 - C_6 alkylene;

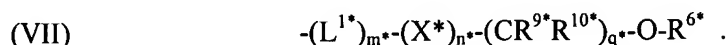
X^* is C_6 - C_{12} alicyclic; and

L^{2*} is of the formula $-CR^{9*}R^{10*}-$, wherein R^{9*} is hydrogen, C_1 - C_{12} alkyl, or C_1 - C_{12} fluoroalkyl, and R^{10*} is C_1 - C_{12} alkyl or C_1 - C_{12} fluoroalkyl.

32. **(Original)** The polymer of claim 31, wherein R^{1*} is of the formula $-(CO)-O-R^{4*}$, wherein R^{4*} is selected from cyclic and acyclic hydrocarbyl substituents with a tertiary carbon attachment point, such that when r^* is 1, then R^{CL*} has the structure



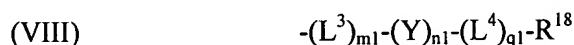
33. **(Original)** The polymer of claim 31, wherein R^{1*} is of the formula $-O-R^{6*}$, wherein R^{6*} is selected from cyclic and acyclic hydrocarbyl substituents with a tertiary carbon attachment point, such that when r^* is 1, then R^{CL*} has the structure



34. **(Original)** The polymer of claim 32, wherein R^{4*} is selected from t-butyl, 2-methyl-2-norbornyl, 2-methyl-2-adamantyl, 2-ethyl-2-adamantyl, isobornyl, 2-methyl-2-isobornyl, 2-methyl-2-tetracyclododecyl, 1-methylcyclohexyl, 1-ethylcyclohexyl, 1-butylcyclohexyl, 1-methylcyclopentyl, 1-ethylcyclopentyl, and 1-butylcyclopentyl.

35. **(Original)** The polymer of claim 33, wherein R^{6*} is selected from t-butyl, 2-methyl-2-norbornyl, 2-methyl-2-adamantyl, 2-ethyl-2-adamantyl, isobornyl, 2-methyl-2-isobornyl, 2-methyl-2-tetracyclododecyl, 1-methylcyclohexyl, 1-ethylcyclohexyl, 1-butylcyclohexyl, 1-methylcyclopentyl, 1-ethylcyclopentyl, and 1-butylcyclopentyl.

36. **(Original)** The polymer of claim 26, wherein R^P has the structure



in which:

$m1$, $n1$, and $q1$ are independently zero or 1;

L^3 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^3 is optionally substituted and/or heteroatom-containing C_1 - C_{12} alkylene, L^1 may be linear, branched, or cyclic;

Y is selected from C_3 - C_{30} alicyclic and substituted C_3 - C_{30} alicyclic;

L^4 is selected from C_1 - C_{12} alkylene, substituted C_1 - C_{12} alkylene, C_1 - C_{12} heteroalkylene, substituted C_1 - C_{12} heteroalkylene, and further wherein when L^4 is optionally substituted and/or heteroatom-containing C_3 - C_{12} alkylene, L^4 may be linear, branched, or cyclic; and

R^{18} is an acid-inert polar organic group containing a heteroatom with a Pauling electronegativity greater than about 3.00.

37. **(Original)** The polymer of claim 36, wherein:

L^3 is selected from C_1 - C_{12} alkylene, and heteroatom-containing C_1 - C_{12} alkylene;

Y is C_3 - C_{18} alicyclic; and

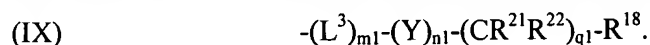
L^4 is selected from C_1 - C_{12} alkylene, hydroxyl-substituted C_1 - C_{12} alkylene, C_1 - C_{12} fluoroalkylene, and hydroxyl-substituted C_1 - C_{12} fluoroalkylene.

38. **(Original)** The polymer of claim 37, wherein:

L^3 is selected from C_1 - C_6 alkylene, and heteroatom-containing C_1 - C_6 alkylene;

Y is C_6 - C_{12} alicyclic; and

L^4 is of the formula $-CR^{21}CR^{22}-$ wherein R^{21} is hydrogen, C_1 - C_{12} alkyl, or C_1 - C_{12} fluoroalkyl, and R^{22} is C_1 - C_{12} alkyl or C_1 - C_{12} fluoroalkyl, such that R^P has the structure



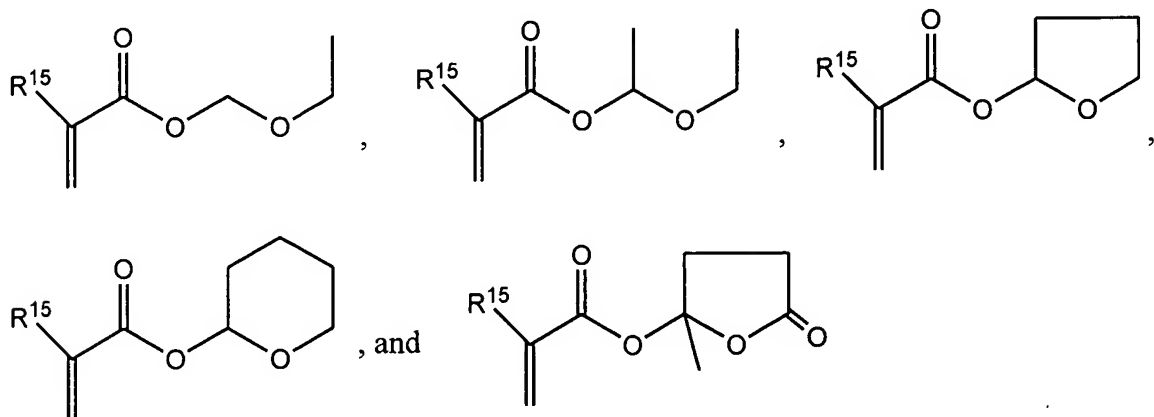
39. **(Original)** The polymer of claim 38, wherein the heteroatom within R^{18} is O or N.

40. **(Original)** The polymer of claim 39, wherein R^{18} is selected from hydroxyl, carboxyl, C_1 - C_{12} alkoxy, C_1 - C_{12} fluoroalkoxy, hydroxyl-substituted C_1 - C_{12} alkoxy, hydroxyl-substituted C_1 - C_{12} fluoroalkoxy, C_2 - C_{12} alkoxyalkyl, fluorinated C_2 - C_{12} alkoxyalkyl, hydroxyl-substituted C_2 - C_{12} alkoxyalkyl, fluorinated hydroxyl-substituted C_2 - C_{12} alkoxyalkyl, hydroxyl-substituted C_1 - C_{12} alkyl, hydroxyl-substituted C_1 - C_{12} fluoroalkyl, carboxyl-substituted C_1 - C_{12} alkyl, carboxyl-substituted C_1 - C_{12} fluoroalkyl, C_2 - C_{12} acyl, fluorinated C_2 - C_{12} acyl, hydroxyl-substituted C_2 - C_{12} acyl, fluorinated hydroxyl-substituted C_2 - C_{12} acyl, C_2 - C_{12} acyloxy, fluorinated C_2 - C_{12} acyloxy, hydroxyl-substituted C_2 - C_{12} acyloxy, fluorinated hydroxyl-substituted C_2 - C_{12} acyloxy, amino, mono- and di- $(C_1$ - C_{12} alkyl)-substituted amino, amido, mono- and di- $(C_2$ - C_{12} alkyl)amido, sulfonamido, N-heteroalicyclic, oxo-substituted N-heterocyclic, and, where the substituents permit, combinations of two or more of the foregoing.

41. **(Original)** The polymer of claim 26, wherein R^P is selected from lactone, anhydride, sulfonamide, fluoroalkanol, alkanol, alicyclic alkanol, esters, ethers, and a combination thereof.

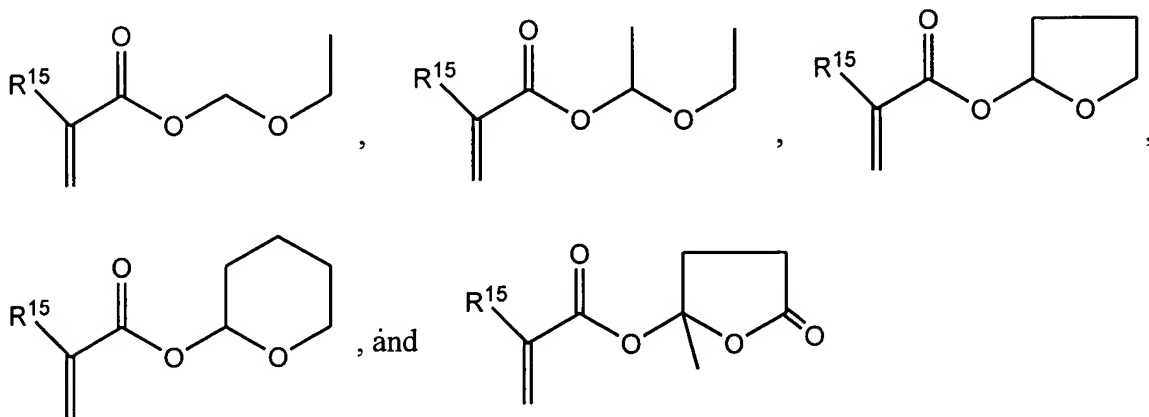
42. **(Original)** The polymer of claim 26, wherein R^{NP} is C_1 - C_{18} hydrocarbyl or fluorinated C_1 - C_{18} hydrocarbyl.

43. **(Original)** The polymer of claim 14, wherein the first olefinic monomer unit is derived from a monomer having a structure selected from the formulae



44. **(Original)** The polymer of claim 43, wherein R^{15} is selected from hydrogen, fluorine, C_1-C_{24} alkyl, and fluorinated C_1-C_{24} alkyl.

45. **(Original)** The polymer of claim 19, wherein the first olefinic monomer unit is derived from a monomer having a structure selected from the formulae



46. **(Original)** The polymer of claim 45, wherein R^{15} is selected from hydrogen, fluorine, C_1-C_{24} alkyl, and fluorinated C_1-C_{24} alkyl.

47. **(Withdrawn)** A lithographic photoresist composition comprising the polymer of claim 1 and a photoacid generator.

48. **(Withdrawn)** The composition of claim 47, further comprising an additive selected from dissolution modifying additives, basic compounds, photospeed control agents, crosslinking agents, surfactants, adhesion promoters, and anti-foaming agents.

49. **(Withdrawn)** The composition of claim 48, wherein the dissolution modifying additive is a dissolution inhibitor.

50. **(Withdrawn)** The composition of claim 47, further comprising an additional polymer.

51. **(Withdrawn)** The composition of claim 50, wherein the polymer is selected from fluorine-containing polymers and non-fluorine-containing polymers.

52. **(Withdrawn)** The composition of claim 47, further comprising a solvent.

53. **(Withdrawn)** The composition of claim 47, wherein the photoacid generator is an onium salt selected from sulfonium salts and iodonium salts.

54. **(Withdrawn)** A lithographic photoresist composition comprising the polymer of claim 14 and a photoacid generator.

55. **(Withdrawn)** A lithographic photoresist composition comprising the polymer of claim 19 and a photoacid generator.

56. **(Withdrawn)** A polymer blend composition comprising the polymer of claim 1 and at least one additional polymer.